

AMENDMENTS TO THE CLAIMS

1. (currently amended) A semiconductor device assembly comprising:
a solder mask over a substrate;
a die;
conductive paths connecting contacts on said die with contacts in said substrate; and
a partially-cured adhesive layer adhering said die to said solder mask, said partially-cured adhesive layer comprising one or more adhesive components that cure at or below
~~having been partially cured at a temperature below about 100°C and having adhesive strength sufficient to hold said die to said solder mask during subsequent package assembly processing.~~

2. (currently amended) The semiconductor device assembly of claim 1, wherein said partially-cured adhesive layer is at least fifty percent cured ~~at a temperature below about 100°C.~~

3. (currently amended) The semiconductor device assembly of claim 1, further comprising an encapsulant molded over the die, ~~whereby said partially-cured adhesive layer is further cured at a temperature above about 100°C.~~

4. (previously presented) The semiconductor device assembly of claim 1, wherein said partially-cured adhesive layer is partially cured at a temperature between about 20°C and about 50°C higher than the glassy temperature of said adhesive layer.

5. (previously presented) The semiconductor device assembly of claim 4, wherein said partially-cured adhesive layer is partially cured at a temperature below about 85°C.

6. (previously presented) The semiconductor device assembly of claim 5, wherein said partially-cured adhesive layer comprises a material with a glassy temperature between about 5°C and about 20°C.

7. (previously presented) The semiconductor device assembly of claim 6, wherein said partially-cured adhesive layer comprises bismaleimide.

8. (previously presented) The semiconductor device assembly of claim 7, wherein said partially-cured adhesive layer consists essentially of bismaleimide.

9. (previously presented) The semiconductor device assembly of claim 1, wherein said partially-cured adhesive layer comprises initiators which react at a temperature below about 100°C.

10. (canceled)

11. (previously presented) The semiconductor device assembly of claim 1, wherein said contacts are substantially free of contaminants outgassed from said solder mask.

12. (currently amended) A semiconductor device assembly comprising:

a solder mask on a substrate;

a die;

electrical contacts on said substrate and said die, each said contact on said die being connected to a respective said contact on said substrate, said electrical contacts being devoid of contamination caused by outgassing from said solder mask; and

a partially-cured adhesive layer affixing said die to said solder mask, said partially-cured adhesive layer containing one or more adhesive components that cure at or below ~~adhesive partially cured at a temperature below about 100°C and at a temperature between about 20°C and about 50°C higher than a glassy temperature of said adhesive layer, said partially-cured adhesive layer having adhesive strength sufficient to hold said die to said solder mask during subsequent package assembly processing.~~

13. (canceled)

14. (previously presented) The semiconductor device assembly of claim 12, wherein said partially-cured adhesive layer is about fifty percent cured.

15. (currently amended) The semiconductor device assembly of claim 12, wherein said partially-cured adhesive layer is has been partially cured at a temperature below about 85°C.

16. (previously presented) The semiconductor device assembly of claim 15, wherein said partially-cured adhesive layer comprises a material with a glassy temperature between about 5°C and about 20°C.

17. (previously presented) The semiconductor device assembly of claim 16, wherein said partially-cured adhesive layer comprises bismaleimide.

18. (currently amended) The semiconductor device assembly of claim 16 ~~17~~, wherein said partially-cured adhesive layer consists essentially of bismaleimide.

19. (previously presented) The semiconductor device assembly of claim 12, wherein said partially-cured adhesive layer comprises initiators which react at a temperature below about 100°C.

20. (previously presented) The semiconductor device assembly of claim 12, wherein said contacts remain relatively free of contaminants released by outgassing from the solder mask during a cure process.

Claims 21-32. (canceled)

33. (previously presented) The semiconductor device assembly of claim 1, wherein the partially-cured adhesive layer is 50% cured.

34. (previously presented) The semiconductor device assembly of claim 1, wherein the partially-cured adhesive layer includes a resin bismaleimide.

35. (previously presented) The semiconductor device assembly of claim 12, wherein the partially-cured adhesive layer is at least 50% cured.

36. (previously presented) The semiconductor device assembly of claim 12, wherein the partially-cured adhesive layer includes a resin bismaleimide.

37. (currently amended) The semiconductor device assembly of claim 1, wherein the subsequent package assembly processing includes wire bonding.

38. (currently amended) The semiconductor device assembly of claim 12, wherein the ~~subsequent package assembly processing includes~~ conductive paths are wire bonding bonds.

39. (new) The semiconductor device assembly of claim 1, wherein said partially-cured adhesive layer has been partially cured at a temperature below about 100°C and has adhesive strength sufficient to hold said die to said solder mask during subsequent package assembly processing selected from the group consisting of encapsulation, solder reflow, and testing.

40. (new) The semiconductor device assembly of claim 12, wherein said partially-cured adhesive layer contains adhesive partially cured at a temperature below about 100°C and at a temperature between about 20°C and about 50°C higher than a glassy temperature of said adhesive layer, said partially-cured adhesive layer having adhesive strength sufficient to hold said die to said solder mask during subsequent package assembly processing selected from the group consisting of encapsulation, solder reflow, and testing.